REMARKS

Pending Claims

The Examiner indicated the status of the claims are "Claims 11-30 and 36-51 are currently pending. Claims 37-51 are newly added." However, Applicants would like to point out as indicated in the Amendment and Remarks filed on August 23, 2007 and the Supplemental Amendment filed October 22, 2007, claims 34 and 35 are also pending. Thus, claims 11-30 and 34-51 are currently pending in this application.

Request for Information

The Office Action contained requests for information under 37 CFR §1.105, which reads in pertinent part "In the course of examining ... the examiner or other Office employee may require the submission, from individuals identified under §1.56(c), or any assignee, of such information as may be reasonably necessary to properly examine or treat this matter..." Applicants respectfully submit answers to each of the Examiner's requirements for information under 37 CFR §1.105.

Connection of Stephen Smith

The Examiner requested Applicants "submit information regarding the connection of Stephen Smith to the pending application." Applicants submit that Stephen Smith ("Smith") has no connection with the inventors and no interest in the pending application.

Smith's Articles

The Examiner requested Applicants "reference specific articles (out of the 163 currently .listed articles) of Stephen Smith which relate to the specific improvements of the subject matter in the claims over the disclosed prior art and indicate the specific elements in the claimed subject matter that provide those improvements. For those claims expressed as a means or steps plus function, please provide the specific page and line numbers within the disclosure which describe the claimed structure and acts."

With respect to the background section of the application, it reads in pertinent part "A variety of automated scheduling techniques has been developed in recent years. These techniques often work by reducing scheduling problems to "Constraint-Satisfaction Problems" (CSPs) and then applying one of a variety of CSP techniques to solving them. See, for example, U.S. Pat. No. 6,070,144, "System and Process for Job Scheduling Using Limited Discrepancy Search," to Ginsberg et al., which is herein incorporated by reference in its entirety; and articles by Stephen Smith, Senior Research Scientist, ICL Laboratory, which may be found at http://www.ri.cmu.edu/people/smith_stephen.html. Virtually all of these techniques have been designed to minimize the "makespan" of the schedule in question, i.e., the time taken to complete the job in its entirety." See [0006] of the published application.

Applicants submit that Smith's work produces schedules of minimum <u>duration</u>. Moreover, Applicants believe that Smith's articles provide general background information with respect to schedules of minimum duration. Applicants specifically point to one paper "Slack-Based Heuristics for Constraint-Satisfaction Scheduling" (the paper) as indicative of the state of the art prior to applicant's invention. The paper is submitted herewith in the accompanying Form PTO-1449. The goal of this paper is to evaluate the performance of new look-ahead heuristics for solving the job shop scheduling problem with non-relaxable time windows. There are N jobs that need to be performed by M machines, where each job requires a maximum time of use of the machines. The goal is to schedule the N jobs as efficiently as possible to minimize the overall duration of the N jobs. See page 139, Introduction, col. 1 – col. 2; page 140, Problem Representation and Search Framework, col. 1 – col. 2; and page 144, Conclusions, col. 1 - 2.

The current application, among other things, produces schedules of minimum <u>cost</u>. To the best of Applicants' knowledge, Smith has done no work on cost minimization. The cost minimizer 104 generates an initial solution, and incrementally improves the solution using different possible solutions for optimal hire/fire decisions. The optimal hire/fire decisions are focused to minimize total cost including base cost, hiring cost, firing cost, overtime, and undertime. The cost minimizer 104 can be used as an alternative to the load leveler 202 for creating an initial schedule. The cost minimizer

104 includes an initial seed generator 402 which creates an initial schedule that is subsequently improved. The seed generator selects a task 300 from the task set 206, and creates a task window for each selected task. For each task, the seed generator 402 sends the task to the manpower planner 106. The process is continued for each task until it is assigned a valid start time and a full initial schedule has been generated. The incremental improvement engine 502 modifies the full initial schedule by passing each task to the manpower planner 106, which selects a start time for the task and determines the cost of the schedule at that start time. See, for example, [0011], [0022], [0035], and [0050 – 0057].

Specifically, claim 11 as an example recites in part "a cost estimator subsystem communicatively coupled to the load leveler subsystem to evaluate the proposed schedule to estimate a cost associated therewith; and a cost minimizer communicatively coupled to the cost estimator for modifying the proposed schedule responsive to the resource fluctuations and its associated cost." Similarly, claim 17 recites in pertinent part "evaluating the proposed schedule to estimate an associated cost; modifying the proposed schedule responsive to the resource fluctuations and the cost". Independent claims 31, 34, 37, 43, and 50 include similar limitations and are patentably distinct from Smith's references.

CONCLUSION

In view of the above remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

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